

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. A method for controlling an engine having an intake manifold and an outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the method comprising:
determining a driver torque command;
calculating a desired cylinder charge based on said driver torque command; and
adjusting the outlet control device to provide said desired cylinder charge.
2. The method recited in Claim 1 wherein said outlet control device is a valve of the engine cylinder with variable lift.
3. The method recited in Claim 1 wherein said outlet control device is a valve of the engine cylinder with variable timing.
4. The method recited in Claim 1 further comprising adjusting the inlet control device based on manifold pressure.
5. The method recited in Claim 4 wherein said manifold pressure is manifold absolute pressure.
6. The method recited in Claim 4 wherein said manifold pressure is manifold absolute pressure measured by a pressure sensor coupled to the intake manifold.

7. The method recited in Claim 4 wherein said adjusting the inlet control device further comprises adjusting the inlet control device based on manifold pressure and desired cylinder charge.

8. A method for controlling an engine having an intake manifold and at least one outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the method comprising:

determining a driver torque command;

calculating a desired cylinder charge based on said driver torque command; and

generating an outlet control device set-point and an inlet control device set-point based on said desired cylinder charge; and

controlling the outlet control device to said outlet control device set-point and the inlet control device to said inlet control device set-point.

9. The method recited in Claim 1 wherein said outlet control device is a valve of the engine cylinder with at least one of variable lift or variable cam timing.

10. A method for controlling an engine having an intake manifold and at least one outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the method comprising:

determining a driver torque command;

calculating a desired cylinder charge based on said driver torque command; and

adjusting the outlet control device so that actual cylinder charge approaches said desired cylinder charge.

11. The method recited in Claim 10 wherein said outlet control device is a valve of the engine cylinder with at least one of variable lift or variable timing.
12. The method recited in Claim 10 further comprising adjusting the inlet control device based on manifold pressure.
13. The method recited in Claim 12 wherein said manifold pressure is manifold absolute pressure measured by a pressure sensor coupled to the intake manifold.
14. The method recited in Claim 12 wherein said adjusting the inlet control device further comprises adjusting the inlet control device based on manifold pressure and desired cylinder charge.
15. A method for controlling an engine having an intake manifold and an outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the method comprising:
 - determining a driver torque command;
 - calculating a desired cylinder charge based on said driver torque command; and
 - generating an outlet control device set-point based on said desired cylinder charge and an indication of actual cylinder charge; generating an inlet control device set-point based on an engine operating parameter; and
 - controlling the outlet control device based on said outlet control device set-point and the inlet control device based on said inlet control device set-point.
16. The method recited in Claim 15 wherein said outlet control device is a valve of the engine cylinder with at least one of variable lift or variable timing.

17. The method recited in Claim 15 wherein said engine operating parameter is manifold pressure.

18. The method recited in Claim 17 wherein said manifold pressure is manifold absolute pressure measured by a pressure sensor coupled to the intake manifold.

19. The method recited in Claim 16 wherein said generating said inlet control device set-point further comprises generating said inlet control device set-point based on manifold pressure and desired cylinder charge.

20. A method for controlling an engine having an intake manifold and an outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the method comprising:

- determining a driver torque command;
- calculating a desired cylinder charge based on said driver torque command;
- adjusting the outlet control device based on said desired cylinder charge and an actual cylinder charge; and
- adjusting the inlet control device based on an engine operating parameter.

21. A method for controlling an engine having an intake manifold and an outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the method comprising:

- determining a driver torque command;
- calculating a desired cylinder charge based on said driver torque command;
- adjusting the outlet control device based on said desired cylinder charge and an actual cylinder charge; and
- adjusting the inlet control device based on intake manifold pressure.

22. The method recited in Claim 21 wherein said intake manifold pressure is an absolute pressure.

Claims 23-53 (cancelled)

54. A method for controlling an engine having an intake manifold and an outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the method comprising:

- determining a desired engine output;
- calculating a desired cylinder charge based on said desired engine output; and
- generating an outlet control device set-point based on said desired cylinder charge;
- generating an inlet control device set-point based on manifold pressure; and
- controlling the outlet control device based on said outlet control device set-point and the inlet control device based on said inlet control device set-point.

55. A method for controlling an engine having an intake manifold and an outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an electronically controlled throttle for controlling flow entering the manifold, the method comprising:

- determining a desired engine output;
- calculating a desired cylinder charge based on said desired engine output;
- generating an outlet control device set-point based on said desired cylinder charge;
- generating a target throttle position based at least on manifold pressure; and
- controlling the outlet control device based on said outlet control device set-point and the electronically controlled throttle based on said target throttle position.

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Claims 56-62 (cancelled)